

## CLAIMS

What is claimed is:

1. A system comprising:  
a photodiode;  
5 a transimpedance amplifier comprising an input terminal to receive an input current from the photodiode, and first and second differential output terminals to provide an output voltage;  
a receive signal strength indicator to generate a differential receive signal strength indication (RSSI) signal based, at least in part, upon the output voltage;  
10 a data recovery circuit to provide a serial data signal in response to the output voltage; and  
a deserializer to provide a parallel data signal in response to the serial data signal.
2. The system of claim 1, the system further comprising a SONET framer to  
15 receive the parallel data signal.
3. The system of claim 2, wherein the system further comprises a switch fabric coupled to the SONET framer.
- 20 4. The system of claim 1, the system further comprising an Ethernet MAC to receive the parallel data signal at a media independent interface.

5. The system of claim 4, wherein the system further comprises a multiplexed data bus coupled to the Ethernet MAC.

6. The system of claim 4, wherein the system further comprises a switch  
5 fabric coupled to the Ethernet MAC.

7. The system of claim 1, wherein the input current comprises a DC current component and an AC current component, the apparatus further comprising a DC offset cancellation circuit to substantially remove at least a portion of the DC signal component  
10 from the input terminal based, at least in part, on the output voltage.

8. The system of claim 1, wherein the input current comprises a DC current component and an AC current component, and wherein the RSSI signal comprises a voltage that is substantially proportional to a magnitude of the DC current component.  
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9. The system of claim 1, the apparatus further comprising:  
at least one low pass filter to provide a differential voltage signal in response to the output voltage; and  
a buffer circuit to generate the differential RSSI signal in response to the  
20 differential voltage signal.

10. The system of claim 9, wherein the buffer circuit comprises a differential amplifier to generate the differential RSSI signal in response to the differential voltage signal.

5 11. An apparatus comprising:  
a transimpedance amplifier comprising an input terminal to receive an input current from a photodiode, and first and second differential output terminals to provide an output voltage;  
a receive signal strength indicator to generate a differential receive signal strength  
10 indication (RSSI) signal based, at least in part, upon the output voltage.

12. The apparatus of claim 11, wherein the input current comprises a DC current component and an AC current component, the apparatus further comprising a DC offset cancellation circuit to substantially remove at least a portion of the DC signal  
15 component from the input terminal based, at least in part, on the output voltage.

13. The apparatus of claim 11, wherein the input current comprises a DC current component and an AC current component, and wherein the RSSI signal comprises a voltage that is substantially proportional to a magnitude of the DC current  
20 component.

14. The apparatus of claim 11, the apparatus further comprising:

at least one low pass filter to provide a differential voltage signal in response to the output voltage; and

a buffer circuit to generate the differential RSSI signal in response to the differential voltage signal.

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15. The apparatus of claim 14, wherein the buffer circuit comprises a differential amplifier to generate the differential RSSI signal in response to the differential voltage signal.

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16. A method comprising:

receiving an input current from a photodiode at an input terminal of a transimpedance amplifier;

generating an output voltage at first and second differential output terminals of the transimpedance amplifier in response to the input current; and

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generating a differential receive signal strength indication (RSSI) signal based, at least in part, upon the output voltage.

17. The method of claim 16, wherein the input current comprises a DC current component and an AC current component, the method further comprising substantially removing at least a portion of the DC signal component from the input terminal based, at least in part, on the output voltage.

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18. The method of claim 16, wherein the input current comprises a DC current component and an AC current component, and wherein the RSSI signal comprises a voltage that is substantially proportional to a magnitude of the DC current component.

5 19. The method of claim 16, the method further comprising:  
receiving the output voltage at by least one low pass filter  
generating a differential voltage signal in response to receipt of the output  
voltage;  
receiving the differential voltage signal at a buffer circuit; and  
10 generate the differential RSSI signal at the buffer circuit in response to the  
differential voltage signal.

20. The method of claim 19, wherein the buffer circuit comprises a differential  
amplifier to generate the differential RSSI signal in response to the differential voltage  
15 signal.